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THE COMMONWEALTH OF MASSACHUSETTS

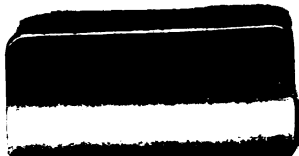
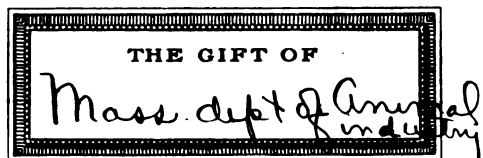
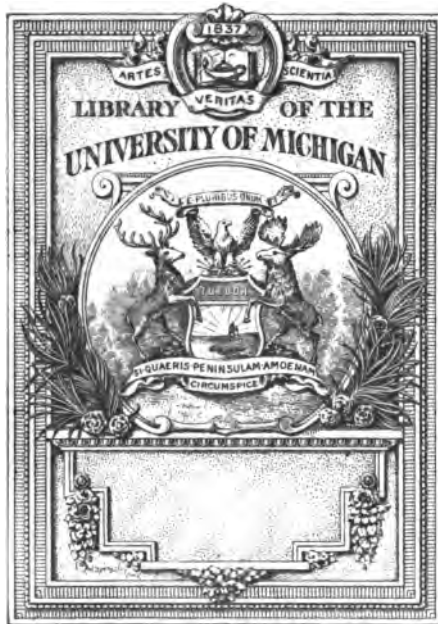
DEPARTMENT OF ANIMAL INDUSTRY

THIRD ANNUAL REPORT

OF THE

Commissioner of Animal Industry

NOVEMBER 30, 1914



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Mass. Department of Agriculture

THIRD ANNUAL REPORT

OF THE

COMMISSIONER OF ANIMAL INDUSTRY.

1914.

FOR THE YEAR ENDING NOVEMBER 30, 1914.



BOSTON:
WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
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THE STATE BOARD OF PUBLICATION.

The Commonwealth of Massachusetts.

DEPARTMENT OF ANIMAL INDUSTRY,
BOSTON, Dec. 1, 1914.

To the Honorable Senate and House of Representatives: —

In accordance with the provisions of section 4, chapter 608, Acts of 1912, which act is entitled "An Act to abolish the Cattle Bureau of the State Board of Agriculture, and to create a Department of Animal Industry," I have the honor to present to the General Court the third annual report of the work accomplished by this department for the fiscal year ending Nov. 30, 1914.

The Department of Animal Industry has in its life of less than three years grown to substantial proportions, and, from the viewpoints of completeness of organization and the loyalty and all-round efficiency of its field and office staffs, is regarded by those who have had experience and association with similar departments in other States, and are thereby competent to judge, to have reached an enviable standard of excellence. To the staff of agents above referred to there has during the past year been added two men, Dr. Edward A. Cahill and Dr. William H. Shannon, whose qualifications and fitness for special work cause them to rank among the best. Dr. Edward A. Cahill of Lowell, formerly associated with the Live Stock Sanitary Board of Pennsylvania, is, in my opinion, an especially valuable man, because his previous training in laboratory and field work in connection with hog-cholera control in Pennsylvania has fitted him to engage in that branch of work for this department. Dr. William H. Shannon of Boston, a graduate of the veterinary department of the University of Pennsylvania, although the youngest man in term of service, is displaying a highly enviable degree of energy and interest in the work, and gives great promise of becoming an extremely valuable man for the department.

I am confident that the department details are well grounded, and that the policy I sought to establish at the outset of my

Mass. Dep. of Animal Industry 4-13-15g.

administration is the correct one, viz., that the department's principal object is to improve the cattle industry of the State, not to injure or destroy it; to promote and safeguard the health of the domestic animals in the State; to establish a spirit of co-operation between the owners of stock and the department rather than a spirit of hostility; to educate rather than persecute the individual owner, and, while insisting upon law observance, to see that justice is meted out to every one. Under such a policy, with a continuance of the splendid loyalty now existent in the working force, Massachusetts must occupy a leading position in live-stock sanitary control work.

I wish to emphasize the fact that owners of stock, almost without exception, have met the representatives of this department in a spirit of co-operation, and the agents of the department are no longer avoided by them, but are sought for consultation and advice. The activity of owners of barns where neat cattle are housed, in the way of making sanitary changes as suggested by department inspectors, is a marked feature of improvement, and is most commendable. Every succeeding year of this policy of education, of persuasion rather than persecution, must bring results more and more satisfying.

The general work of the department has not differed in nature from that of the years immediately preceding. It has, however, been much more exhaustive in character and complete in detail, as the result of a more perfected organization and efficiency born of experience.

RABIES.

The following table shows the extent of rabies during the year ending Nov. 30, 1914:—

	Dogs.	Cattle.	Cats.	Horses.	Pigs.
Killed or died with rabies, . . .	250	5	1	1	8
Killed by owners or died in quarantine, not rabid.	184	1	—	—	—
Released from quarantine, . . .	277	3	1	1	428
Animals still in quarantine, . . .	49	—	—	—	—
Totals,	760	9	2	2	436
Grand total,	1,209 animals.				

At the laboratory, the brains of 108 dogs and 1 cat were examined microscopically by Dr. Langdon Frothingham, and of these, 78 dogs were positive and 24 negative. The cat was also found to have had rabies. The heads of seven other dogs were received at this laboratory too badly decomposed to permit of an examination to determine whether or not the animals were rabid at the time of death.

It is regrettable that there is an increase in the number of cases of rabies in dogs over that of last year, and much to be deplored that animals manifesting strange symptoms are not more promptly placed in confinement and watched until either found to be free from disease, or symptoms of a suspicious character have developed.

At the expense of repeating my former advice along this line, I would say that the early recognition of the symptoms of rabies makes the prompt reporting to the proper authorities possible. Such early reports promptly acted upon tend to reduce greatly the number of outbreaks of the disease, and logically would lessen immensely the number of persons who annually find it necessary to take the Pasteur treatment because either bitten by or exposed to rabid animals. Over 100 people have been so exposed this year, of which by far the greater number were children.

The unknown or ownerless animal still plays a prominent part in this trouble, and this shows the necessity for the proper enforcement of the laws relating to the licensing of all dogs, and the humane destruction of such waifs of the canine world as are to be found in every community.

Some few owners from time to time complain of the irksomeness of the period of quarantine placed upon animals believed to have been exposed to a case of rabies, but the wisdom of the department's action is evident when it is pointed out that animals frequently develop rabies during the latter part of the period of quarantine, and in fact during the past year one animal did develop the disease after the ninety-day period had expired.

GLANDERS.

Not by any means the least important of the problems that confront this department is that of control of glanders. As a result of the more recently enacted laws and of a more completely adjusted and well-organized campaign against this disease, I have to report most flattering success in this branch of our control work during the past year, as the following figures and statements will emphasize.

Eighteen hundred and seventeen horses and mules have during the past year been reported as suspected of having glanders or farcy, including those dealt with in stable tests. Of this number, 846 were killed or died, and were found to be affected with glanders; 928 were released after examination, and 43 were held for further observation.

Of the 38 cases held over from last year, 5 were killed or died, 16 were released as free from disease, and 17 are still under observation, making a total of 851 cases of glanders during the year. Of this number, 352 were located in the city of Boston.

It will be noted that although 187 more suspected cases were reported and examined by agents of the department, the number of actual cases found was 255 less than in the previous year.

In the report submitted for the year ending Nov. 30, 1913, it was mentioned that as a means of further checking the spread of glanders it was deemed necessary to order the closing of the public drinking troughs in the city of Boston, as in that year 52 per cent. of the positive cases found in Massachusetts were discovered in the city of Boston. The report stated that on November 1 this order had been complied with.

The public works department of the city of Boston, by providing taps at convenient locations throughout the city, enabled drivers to obtain water without great inconvenience either to themselves or to the horses in their charge. Considerable pressure was brought to bear to have these troughs opened during the summer months, but, believing my stand on the matter to be right, I was able to overcome the objections raised, and kept the troughs closed. I have failed to find from reports received that any undue suffering was caused, and in fact the

closing of these public drinking places has not only been beneficial from the standpoint of glanders control, but I have been informed by a great many owners of horses and by several veterinarians that there had been fewer "colics" or cases of indigestion this past summer than ever before.

The wisdom of having taken this step is well proven by the fact that there were killed in Boston this year only 352 horses affected with glanders, against 576 horses killed in 1913, a falling off of 224, or 39 per cent., whereas in the balance of the State there were 497 horses killed in 1914, against 530 in 1913, a falling off of 33 cases, or 6 per cent., thereby showing that the greatly reduced number in the city of Boston must have been due to some cause other than a natural subsidence in the disease itself.

The watering troughs in the following cities were also ordered closed: —

Cambridge
Everett
Quincy

Chelsea
Somerville

Medford
Malden

The advisability of requiring that all horses arriving from the States of New York, Rhode Island and Connecticut shall be accompanied by a permit issued from this department is shown by the fact that of 268 horses tested by agents of the department after having been admitted under such permits, 21 were found to be suffering from glanders, and were killed.

The ophthalmo-mallein test, material for which is obtained from the United States Bureau of Animal Industry, is proving to be of great value in conjunction with the complement-fixation test in the diagnosing of doubtful and nonclinical cases. It is also being employed in the making of stable tests, with highly satisfactory results.

The subcutaneous injection of mallein has been discontinued, as it has been found to detract from the value of other diagnostic tests.

During the year, 1,688 samples of blood have been taken from 1,274 horses. Of this number, 447 horses were killed, 777 released, 25 died, and 25 are held for further test.

Eight hundred and seventy-three ophthalmomallein tests were applied during the year, with the following results: 261 gave positive results, 533 were negative and 79 unsatisfactory.

A more thorough system of disinfection was adopted during the past year, an agent of the department inspecting the work done before compensation for a condemned animal is allowed. The blacksmith in whose shop the horse was last shod is obliged to disinfect the walls, chains, etc., in said shop.

Early in December a copy of the following letter was sent to every horseshoeing establishment in Boston:—

THE COMMONWEALTH OF MASSACHUSETTS,
DEPARTMENT OF ANIMAL INDUSTRY,
STATE HOUSE, BOSTON, NOV. 24, 1913.

DEAR SIR:— You will find enclosed copy of a recent order issued by me relative to the disinfection of blacksmith shops in the city of Boston; also copy of the rules and regulations of this department for disinfection.

It is not necessary for me to bring to your attention the grave condition that confronts the horse-owning interests of Boston and vicinity because of the prevalence of glanders. In order to control the further spread of this disease so far as we can, may I ask you to co-operate with me along the lines of the enclosed order? It applies to all premises where horses, asses or mules are shod, and an agent of this department will visit your place from time to time to see if its provisions have been complied with. Certificate of this department to that effect will be furnished on application.

Thanking you in advance for giving this matter immediate and constant attention, I am

Respectfully yours,

FRED FREELAND WALKER,
Commissioner of Animal Industry.

Enclosed with this letter was a copy of the following order:—

THE COMMONWEALTH OF MASSACHUSETTS,
DEPARTMENT OF ANIMAL INDUSTRY,
STATE HOUSE, BOSTON, NOV. 1, 1913.

To Owners and Tenants of Blacksmith Shops in the City of Boston:—

Whereas the disease of glanders among horses in the city of Boston has spread to such an alarming extent as to call for special effort for its prevention and control, and whereas blacksmith shops are, in my opinion, a factor in the spread of said disease,

I, therefore, acting under authority vested in me by law, and with the approval of the Governor and Council, as set forth in section 4 of Department Order No. 1, hereby order: —

All blacksmith shops within the limits of the city of Boston must be kept freshly whitewashed and disinfected.

Hitch ropes, chains, or other means of confining animals while in the shop must be sponged, sprayed with or dipped in a disinfectant solution, and walls faced by animals must be disinfected at least once a day. The floors whereon animals are allowed to stand must be disinfected at least once a week.

FRED FREELAND WALKER,
Commissioner of Animal Industry.

(Rules for disinfecting will be sent upon application.)

Following this letter a systematic inspection of all shops has been made, 142 having been visited during the year. Many of these shops have been frequently visited by agents of the department, as a result of which 99 shops are now being regularly disinfected, and are, in the opinion of our agents, satisfactorily safe establishments.

I still believe that the amount of compensation now allowed for condemned horses is inadequate if eradication of glanders is ever to be accomplished; it hinders rather than aids in the final disposition of horses which show no clinical symptoms but react to the glanders test made in stables where clinical cases have occurred, which horses I believe it highly necessary should be disposed of promptly.

Reports of rendering companies, as required by section 111 of chapter 75 of the Revised Laws, as amended by chapter 243 of the Acts of 1907, continue to be of much value in furnishing information of cases of glanders or farcy which would not otherwise be brought to the attention of the department, as the following table illustrates: —

Reports of Rendering Companies.

RENDERING COMPANIES.	Number of Reports.	Number of Cases.	Number not previously reported.
W. H. Abbott, Holyoke,	1	1	-
C. S. Bard, Haverhill,	3	3	-
Daudelin & Cotton, Ayer,	1	1	-
William S. Higgins, Saugus,	22	23	1
Home Soap Company, Millbury,	7	12	-
William Lavery, Amesbury,	3	4	-
Lowell Rendering Company, Lowell,	7	7	-
A. G. Markham & Co., Springfield,	1	2	-
James E. McGovern, Andover,	2	2	1
Muller Brothers, Cambridge,	38	130	-
William H. Nankervis, Marlborough,	6	6	1
New Bedford Extractor Company,	23	29	-
New England Rendering Company, Brighton,	36	79	15
Parmenter & Polsey Fertiliser Company, Peabody,	21	39	-
N. Roy, Jr., Fall River,	26	32	-
Sherborn Rendering Company,	4	5	-
N. Ward Company, South Boston,	49	304	6
Whitman & Pratt Rendering Company, North Chelmsford,	7	9	-
S. Winter Company, Brockton,	13	18	-
Worcester Rendering Company,	7	12	-
Totals,	277	718	24

Interstate Horses.

Under Department Order No. 8, which went into effect Oct. 29, 1913, prohibiting the shipment of horses, asses or mules from the States of New York, Connecticut or Rhode Island into Massachusetts without a permit issued from this department, the work performed is shown by the following statistics:—

Animals brought into State.

Mules,	27
Asses,	5
Donkeys,	3
Horses,	5,064
	<hr/> 5,099

Disposition of Above Animals.

Died soon after arrival,	3
Condemned for glanders or farcy,	23
Released as free from glanders upon examination or test by agents of the department,	5,073
	<hr/> 5,099

Of the 23 interstate horses condemned by the State, 2 showed no lesions of glanders or farcy upon post-mortem examination, and in these cases the owners have been compensated for their loss by the Commonwealth. These 23 animals are included in the total number of horses condemned during the year for glanders or farcy.

ANNUAL INSPECTION OF NEAT CATTLE, FARM ANIMALS AND PREMISES UPON WHICH THE FORMER ARE KEPT.

In January a copy of the following circular letter was sent to each inspector of animals in the cities and towns of the State, together with blank books in which to record the results of their work: —

THE COMMONWEALTH OF MASSACHUSETTS,
OFFICE OF DEPARTMENT OF ANIMAL INDUSTRY,
STATE HOUSE, BOSTON, Jan. 1, 1914.

DIRECTIONS TO INSPECTORS OF ANIMALS.

In accordance with section 17, chapter 90 of the Revised Laws, inspectors of animals are hereby directed to make a general inspection of all neat cattle, sheep, swine and goats found within the limits of their several cities and towns, such inspection to commence January 15, and to be completed on or before the first day of March, 1914.

If upon examination the inspectors find such animals to be free from contagious disease, they will give the owner or person in charge thereof a certificate of health, as provided for in section 18 of chapter 90 of the Revised Laws; but if an inspector has reason to suspect the presence of any contagious disease among any species of domestic animals, he is to quarantine such animal or animals and send duplicate copy of such quarantine to the Commissioner of Animal Industry.

Contagious diseases under the provisions of section 28 of chapter 90 of the Revised Laws include glanders, farcy, mange, contagious pleuropneumonia, tuberculosis, Texas fever, foot-and-mouth disease, rinderpest, hog cholera, rabies, anthrax or anthracoid diseases, sheep scab and actinomycosis.

Inspectors of animals are hereby directed to inform owners of premises when in their opinion conditions are not up to the requirements, and to give instruction to have the same changed or improved.

Books will be forwarded (Form No. 1) for carrying out the provisions of sections 17 and 24 of chapter 90 of the Revised Laws. Ten questions may be answered by checking the word "Yes" or "No;" that is, if the answer to the question is "Yes," a check mark or cross is to be made on or through the word "Yes." Four questions may be answered by checking the proper word in the question; that is, question No. 9 reads: "Is stable clean, unclean, or filthy?" If stable is clean, the word "clean" is to be checked or crossed; if stable is unclean, the word "unclean" is to be checked or crossed, etc. Two questions, Nos. 10 and 16, require the answers to be written out in full; these refer to the disposal of manure and to the nature of improvements made in either the buildings or surroundings during the past year.

It is sincerely hoped that the inspection this spring will be a thorough one, and it is requested that the answers to the questions be carefully made.

The books necessary for this inspection will be forwarded at once. Form No. 1 is to be returned to this office by *prepaid* express as soon as inspection is completed.

FRED F. WALKER,
Commissioner.

In referring to this important feature of the department's work I feel that at this time it is entirely proper for me to state, with especial emphasis, that decidedly pronounced improvement has been made in the sanitary conditions of all farm buildings and their environments. A new plan has been adopted during the past year under which local inspectors of animals, acting under specific directions from the department's headquarters, become in a more complete sense of the word agents of the department. A new form for recording conditions found by local inspectors, on their annual visitation to the various farms in their individual localities, provided that by the use of carbon two copies of their record could be secured, one of which was left with the owner and the other retained by the inspector, and from the latter full record was made in the regular so-called blue book furnished for returning report to the office of the department.

At the time a copy of this record is left with the owner of the premises, such recommendations for improved conditions, if any, as are necessary, in the opinion of the inspector, are

brought to the attention of the owner by that inspector, and the owner is requested to make such improvements. A later visit is made by the local inspector, at which time, if conditions are found to have been decidedly improved, the report submitted to the department in the blue book above referred to credits the owner with the conditions found on the second visit. Inspired by the ambition to have their buildings reported in the most favorable class, owners frequently follow the recommendations made by the inspector. As a result, many of the cases that would formerly have been called to the attention of our district agents are satisfactorily disposed of locally, giving our district agents a greater opportunity to make general supervision of the areas under their charge. In consequence, many places not especially referred to by local representatives as unsatisfactory have been investigated by our district agents, who have thereby been able to confirm the earlier local report, or have had an opportunity, if finding conditions below the department's standard, to bring the same to the attention of the local inspector and instruct him intelligently in reference to his course of procedure in the future.

A continuance of this policy will, in my opinion, rapidly raise the standard of our Massachusetts dairy barns to a high order of excellence. In fact, a marked improvement is now apparent, and from many sections of the State we have received most decidedly flattering reports from citizens not at all associated with the department but who are interested in general sanitary work.

The following table embodies a condensed report of the doings of the inspectors of animals in making the annual inspection, which complies with the requirements of section 24, chapter 90, Revised Laws. For comparison, the corresponding figures for 1913 are also given: —

Net Results of Annual Inspection of Animals and Farm Premises.

	1913.	1914.
Number herds inspected,	30,655	29,543
Number neat cattle inspected,	224,951	218,786
Number cows inspected,	158,116	152,636
Number herds kept clean and in good condition, . .	27,227	28,474
Number sheep inspected,	24,847	19,319
Number swine inspected,	71,114	59,221
Number goats inspected,	1,249	1,086
Number stables inspected,	32,055	30,638
Number stables well located,	29,472	27,926
Number stables well drained,	30,776	30,258
Number stables well ventilated,	30,112	30,150
Number stables well lighted,	28,128	29,398
Number stables kept clean,	26,549	29,044
Number stables with good water supply,	31,683	30,470
Number stables improved since last inspection, . . .	3,370	4,209

The following table embodies a condensed report of the work of the district agents in the matter of barn inspection, which complies with the requirements of chapter 381 of the Acts of 1911:—

Report of District Agents on Barn Inspection for Year ending Nov. 30, 1914.

	Mr. F. S. Bancroft.	Dr. G. W. Bickell.	Dr. E. A. Cahill.	Mr. C. J. Dalley.	Dr. E. L. Hannon.	Mr. F. C. Marion.	Dr. M. L. Miner.	Dr. H. E. Paige.	Dr. C. H. Paquin.	Dr. H. W. Peirce.	Dr. J. H. Roberts.	Dr. F. P. Sturges.	Dr. W. T. White.	Totals.
Stables reported as unsatisfactory,	838	62	94	248	215	684	439	230	1,062	74	893	263	75	5,177
Stables visited,	788	59	79	234	201	615	411	224	868	72	877	175	68	4,671
Stables not yet inspected,	50	3	15	14	14	69	28	6	194	2	16	88	7	506
Stables visited once, all necessary improvements made.	306	21	10	109	110	413	274	141	281	48	633	56	41	2,443
Stables visited more than once, all necessary improvements made.	46	9	-	21	-	25	29	20	274	6	10	14	1	455
Stables visited once, not all necessary improvements made.	379	12	69	52	89	149	83	39	164	11	225	90	26	1,388
Stables visited more than once, not all necessary improvements made.	57	17	-	52	2	28	25	24	149	7	9	15	-	385

TUBERCULOSIS.

The war against tuberculosis in cattle is still conducted, in a general way, as described in earlier reports on this disease. It includes the examination and report by local inspectors; the taking up by an agent of the department, who finally disposes of the same, of the cases reported as suspicious; and the tuberculin testing of all cattle received from without the State.

This latter work is being done by approved veterinarians in the States from which the cattle come, or by agents of this department, either at the quarantine station or at the various receiving points throughout the State. The following figures show the number of cattle so tested and the results obtained: —

Cattle Tuberculin Tested.

Cattle tested at the quarantine station at Brighton,	17,411	
Cattle tested by veterinarians outside of the State: —		
Received at Brighton,	674	
Received at other points,	2,042	
	<hr/>	2,716
Cattle tested by agents of the department at points other than the quarantine station,	3,518	
	<hr/>	23,645

Disposition of Above Cattle.

Cattle condemned on Brighton test,	587	
Cattle killed on "permit to kill," tested at Brighton,	13	
Cattle released from Brighton,	17,485	
Cattle condemned, tested at other points than Brighton,	86	
Released for slaughter, subject to inspection,	2	
Released on satisfactory test,	5,472	
	<hr/>	23,645

The foregoing shows that substantially the same number of cattle was received at Brighton as in the previous year, the shortage as recorded being occasioned by the closing of the market during the last three weeks of the official year on account of the existence of foot-and-mouth disease.

The work at the quarantine stations is, as formerly, under the direct supervision of Agent Frank C. Field. The general excellence of the work done by the efficient corps of assistants under his supervision is best instanced by the fact that not a single complaint has been filed at the office in reference to that

work that could be substantiated by fact when investigated; and especially by the further fact that of the 17,411 cattle received at Brighton and tested there, 587 or $3\frac{1}{2}$ per cent. reacted to the tuberculin test, and only one of such reactors failed to show lesions of tuberculosis on post-mortem examination.

The revenue received from testing cattle owned by non-residents of Massachusetts amounted during the year to \$3,776.50, which sum largely offsets the cost of maintenance of quarantine stations.

The following figures show the number of neat cattle quarantined by local inspectors, the number for which warrants were issued and the disposition made of the animals: —

Total number of cattle quarantined or reported for examination during the year,	2,259
---	-------

Massachusetts Cattle.

Number released,	288
Number condemned, killed and paid for,	880
Number condemned and killed, in process of settlement,	141
Number permit to kill, paid for,	63
Number permit to kill, no award,	174
Number died in quarantine, no award,	36
	<hr/> 1,582

Cattle from without the State.

Number released,	12
Number condemned and killed, no award,	654
Number condemned and killed, no lesions found, paid for,	6
Number still in process of settlement,	5
	<hr/> 677
Total,	<hr/> 2,259

Of the 677 interstate cattle, 575 were tested at Brighton; no lesions were found in 1, for which the State has reimbursed the owner. Of the remaining 101 cattle (which were tested at other points than Brighton) 5 were found to show no lesions, for which the State has reimbursed the owners, and 5 cases are still unsettled.

In addition to the 2,259 head of cattle disposed of as above, 133 cattle and 27 swine have been reported by butchers, ren-

derers and boards of health as having been found tuberculous at the time of slaughter, all of which were rendered.

The following statistics in connection with the maintenance of a quarantine against other States, to prevent the introduction of tuberculous cattle from outside sources into Massachusetts, show the number and kind of animals brought in from without the State to the several quarantine stations, the quarantine, however, being against neat cattle only:—

Receipts of Stock at the Watertown Stock Yards, from Dec. 1, 1913, to Nov. 30, 1914.

New Hampshire cattle,	9,657
Vermont cattle,	5,056
Massachusetts cattle,	3,683
Sheep,	2,618
Calves,	26,142
Swine,	4,116

Receipts of Stock at the New England Dressed Meat and Wool Company's Yards at Somerville, from Dec. 1, 1913, to Nov. 30, 1914.

Maine cattle,	1,731
New Hampshire cattle,	1,240
Vermont cattle,	8,155
Western cattle,	12,539
Canada cattle,	2,062
Sheep,	452,438
Calves,	47,798
Swine,	994,265

Receipts of Stock at Brighton, from Dec. 1, 1913, to Nov. 30, 1914.

Maine cattle,	12,857
New Hampshire cattle,	4,809
Vermont cattle,	5,591
Massachusetts cattle,	14,766
New York cattle,	18,079
Western cattle,	10,198
Canada cattle,	155
Sheep,	14,521
Calves,	55,240
Swine,	46,700

The cattle upon which a tuberculin test is required are mostly milch cows to be offered for sale at the Brighton market Wednesdays, besides a few bulls and working oxen. Those

animals that come to Watertown or Somerville are taken to Brighton, and all of the testing is done at the stock barn there.

During the year Department Orders 9, 10 and 11 were issued, printed on large placards and posted on the quarantine grounds. The purpose of these orders, similar to those issued in previous years, was to prevent the spread of contagion from any cattle which might be brought from districts infected with Texas fever or other contagious disease. Order No. 11 practically revokes orders 9 and 10, and is as follows: —

ORDER NO. 11.

THE COMMONWEALTH OF MASSACHUSETTS,
DEPARTMENT OF ANIMAL INDUSTRY,
STATE HOUSE, BOSTON, Oct. 28, 1914.

To All Persons whom it may concern: —

Whereas the diseases known as Texas fever and foot-and-mouth disease, which are contagious diseases and are so recognized under the laws of this Commonwealth, prevail among cattle in some of the States and territories of the United States, and whereas animals infected with or exposed to said diseases are likely to be brought upon the premises of the Butchers' Slaughtering and Melting Association at Brighton, the New England Dressed Meat and Wool Company at Somerville, or the premises of Sturtevant & Haley at Somerville, for slaughter,

Now, therefore, acting under and by virtue of the authority vested in me by the provisions of chapter 90 of the Revised Laws and chapter 608 of the Acts of 1912 and all acts in amendment thereof and addition thereto and all other authority me hereto enabling, I do hereby make the following order and regulation: —

The premises of the Butchers' Slaughtering and Melting Association at Brighton, the slaughtering department on the premises of the New England Dressed Meat and Wool Company at Somerville, and the premises of Sturtevant & Haley at Somerville, are hereby quarantined. Neat cattle shall be brought upon them for immediate slaughter only. Cattle brought upon these premises shall not be removed alive, but shall be slaughtered.

This order shall be published by posting three or more copies upon the premises of the Butchers' Slaughtering and Melting Association at Brighton in the city of Boston, three or more copies upon the premises of the New England Dressed Meat and Wool Company in Somerville, and three or more copies upon the premises of Sturtevant & Haley in Somerville.

FRED FREELAND WALKER,
Commissioner of Animal Industry.

Approved in Council Nov. 4, 1914.

E. F. HAMLIN,
Executive Secretary.

Report of Cattle brought into State during the Year to Points outside of the Quarantine Stations.

For dairy and breeding purposes, tested before shipment,	2,042	
For dairy and breeding purposes, tested after arrival,	3,518	
		<hr/> 5,560
Neat cattle on which no test was required, exclusive of cattle and calves for immediate slaughter,		1,587
The last item is made up as follows: —		
Returned from out-of-State pastures,	1,026	
Calves under six months old,	165	
Died before test could be made,	2	
For temporary stay on exhibition or at auctions,	391	
Remaining in State for brief periods only,	3	
Cattle for immediate slaughter,	4,069	
Calves for immediate slaughter,	6,140	
		<hr/> 10,209
Total for all purposes,		<hr/> 17,356

Nearly all of the total number of animals given above were brought into the State on permits issued by the head of the department, only 580 having been brought in without permits, which were reported to the department by railroad agents, local inspectors or others. Of these, 104 were tested before shipment, 87 were slaughtered at once for beef or veal, 37 were kept in the State only temporarily, 3 were calves under six months old, 126 were returned from pasture, and the remainder, 223 head, were tested by agents of the department.

The following figures show the disposition of animals brought into the State to points outside of the quarantine stations at Brighton, Watertown and Somerville which failed to pass a satisfactory tuberculin test: —

Condemned on first test,	43
Condemned on second test,	41
Reacted, but died before retest could be made,	1
Failed to react on second test, but showed physical symptoms,	1
Released for slaughter on first test, subject to inspection,	2

In five of the above cases in which warrants to kill have been issued, report of post-mortem examination has not yet

been received; in 1 case the result cannot now be known, although the animal was probably tuberculous; 2 head were in a herd affected with foot-and-mouth disease, and were killed because of that disease before warrants issued for their slaughter on account of tuberculosis could be executed; 2 head released for slaughter on first test were found to be diseased, as was the animal that failed to react on second test; the carcass of the animal that died before it could be retested showed indications of disease; in 9 head no lesions of tuberculosis were found upon post-mortem examination, and the animals either have been or will be paid for by the State; the remainder, 67 head, all proved to be tuberculous.

There were 1,044 permits issued, 156 of which were not used. Eleven permits were issued for pasturing herds in the State during the season; 2 were issued allowing cattle to be unloaded in transit through the State; and 11 special permits to persons living near the border line, allowing cattle to be kept in the State for brief periods without test.

During the spring and early summer agents of the department examined and tagged 1,816 Massachusetts cattle which were to be sent into New Hampshire and Vermont for pasture during the season. Some of these were returned in the fall on special permits, and many were brought to the quarantine station at Brighton, where they were identified and released by the agent in charge of that station.

After November 7 no cattle were allowed to be brought into the State except for immediate slaughter, and then only to establishments which were under federal inspection, because of the quarantine restrictions which went into force early in November on account of the discovery of foot-and-mouth disease; otherwise the total receipts of live stock from out of the State would probably have been considerably larger.

For several years, at the request of the United States Department of Commerce and Labor, a report of the receipts of all live stock at the port of Boston has been sent to Washington each month. The report is made to show weekly receipts. The following table shows the receipts, by months, for the past year: —

Receipts of Live Stock at Boston for Twelve Months ending Nov. 30, 1914.

FOR MONTH OF —	Cattle.	Calves.	Sheep.	Swine.	Horses.
December,	13,793	10,422	53,509	163,781	1,859
January,	9,518	7,700	37,166	107,948	1,760
February,	7,590	8,102	28,000	81,168	1,816
March,	8,809	13,784	34,495	100,393	2,616
April,	6,638	10,298	20,682	69,728	2,238
May,	6,313	13,582	21,652	71,337	2,497
June,	8,738	14,909	35,399	113,926	3,076
July,	6,424	10,055	40,048	73,632	1,965
August,	10,790	12,768	45,836	71,300	2,487
September,	10,844	9,547	49,340	58,882	2,398
October,	11,564	11,488	55,707	68,623	2,605
November,	9,557	8,525	47,743	63,365	1,992
Totals,	110,578	131,180	469,577	1,044,083	27,379

Such owners of cattle as have voluntarily petitioned the department for the tuberculin testing of their herds by the State have been accorded this privilege where conditions seemed to justify it. Two persons made voluntary requests to have their herds so tested, — the herds comprising 28 head of cattle, 27 of which were found to be free from disease, and 1 was slaughtered on a permit to kill, no award allowed.

HOG CHOLERA.

In June of 1914 the department began an active campaign against hog cholera in this State. Such a campaign was found necessary because of the large number of deaths in swine, and the corresponding financial loss to farmers due to the disease. While Massachusetts is not considered a hog-raising State, it is known that we have more than our proportionate share of hog cholera as compared with the hog-raising western States, and because of this there is a great diminution in the number of swine in the State, as shown by the following statistics: —

Number of Swine in Massachusetts.

1912,	98,836
1913,	71,114
1914,	59,221

There is a visible decrease in these years of 39,615 animals, which indicates plainly the loss to both State and farmer. This decrease is known to be due principally to hog cholera. The majority of hog raisers have had their herds of swine so often and so completely destroyed by the disease that, in spite of the fact that there is more profit in swine to-day than ever before, it has become necessary for them to give up raising rather than to restock and risk another loss.

Inasmuch as the value of serum treatment for hog cholera has proven satisfactory, I decided to make this a branch of the departmental activity to aid the public, and consequently in June this branch of the work was actively begun. As a result of our demonstrational and educational work among the farmers and veterinarians, and judging from actual statistics given below, we feel that we have laid an excellent foundation for the immunization work which is to follow next year.

During the past year 100 outbreaks of cholera were reported. Of this number, 80 proved upon investigation to be positive cases; in the remaining 20 suspected outbreaks, no hog cholera was found. This gives only a slight idea of the amount of hog cholera which actually exists in the State. It has been customary for years for owners not to report the existence of hog cholera in their herds because so little could be done for it, and the farmer, until recently, would either slaughter the animals or allow them to die. As a result of our activity with serum as a preventive and curative, public interest has been aroused, more cases have been reported, and State aid has been requested.

As far as our records show, approximately 900 head of swine died last year without treatment, or previous to our using serum in control work. If all animals which actually died of hog cholera had been reported, I believe this number would have been tripled.

Previous to June 1 anti-hog-cholera serum was used on 315 animals in 10 herds. Of this number, 89, or 29½ per cent., died following treatment. Up to this time the double treatment had not been used except experimentally. During the remainder of the year 591 animals in 18 herds received the simultaneous or double treatment. Of this number 12, or 2 per cent.,

died after the treatment. In the same length of time 428 animals in 31 infected herds received the single treatment, and 41, or 9.5 per cent., died. The usual mortality from hog cholera is from 90 to 100 per cent. of all animals on infected premises; consequently the above figures would indicate that to date we have saved by the use of the single and double treatments 1,264 animals, which have been vaccinated, have recovered and been released. This represents a saving to the farmers of approximately \$12,000 since June 1.

In addition to the above there are still five herds which are under observation and treatment, in which our work has not been completed. In these five herds there are approximately 4,000 animals, of which number 3,000 have received the double treatment, and 1,000 the single treatment. Results in these cases will be ascertained later, inasmuch as sufficient time has not yet elapsed since treatment to determine them properly at this time. In all five of these herds a large percentage of animals has been lost each year from cholera for a period of from four to twenty years past. In each instance following vaccination, losses from the cholera, which was present at the time of vaccination, have ceased completely, at least temporarily.

One striking factor in this work is that all of the above herds have been badly infected ones. In two herds in which the animals have been inoculated and in which no infection existed, there has not been a single death. We have proven conclusively that the double treatment, properly administered by experts under proper conditions, is absolutely safe, and a sure preventive if used on noninfected farms. On the other hand, it has been proven in other States that the promiscuous or unscientific use of virus is the most dangerous factor connected with the spread of the disease of hog cholera.

Regarding the single treatment, as our results indicate, this has been used practically only on animals which were infected, and therefore may be regarded as a curative. While strictly speaking we do not advocate serum as a curative agent, we have had excellent results when using it in infected herds, the percentage of deaths, 9.5, being extremely low. In our work there has been a noticeable lack of deaths due to abscesses

and infections following vaccination. This has generally been the cause of many deaths which have followed vaccination, and it is gratifying to find that our percentage is practically nothing. This, of course, is due to the fact that our agents take all recognized antiseptic precautions, and insist on proper after-care of the animals.

The most objectionable feature of the work as at present carried on is the fact that we are necessarily obliged to depend entirely upon commercial virus and serum. This has resulted in our using virus, in at least two instances, which was impotent, and which, instead of causing a permanent immunity in the vaccinated animals, caused merely a temporary one, with embarrassing after results. While we use commercial virus, this complication is liable to arise at any time; and in my opinion it is absolutely imperative that, if the department is to do necessary work in connection with hog cholera, the State should have its own facilities for making virus at least, if not serum. At present the only cost to the farmer is that of the serum and virus used on his animals. This is now $2\frac{1}{2}$ cents per cubic centimeter, or approximately 1 cent per pound of live weight, which deters a great many owners from having even the serum treatment alone used. If we were able to manufacture our own serum, we could reduce the cost to the farmer at least 1 cent per cubic centimeter. We should either furnish the highest grade serum and virus free, or make our own and sell it at cost, when used by agents of this department. This, of course, would require an appropriation.

The few following fundamental facts have been established by our work: —

1. That in noninfected herds we can confer a lasting immunity with practically no danger. As a result, we urge the double treatment in noninfected herds in infected neighborhoods. In noninfected herds in neighborhoods where no cholera exists, we do not advise treatment.
2. That the double treatment is of high value for well animals in infected herds, as it confers a lasting immunity.
3. That it pays to use the "serum only" treatment on swine showing symptoms of acute cholera.
4. That it does not pay to use serum on chronic cases.

In addition to the above, we are doing a large amount of experimental work. This is, of course, absolutely necessary. Among the most important requirements for carrying on this work, which we now lack, are a cheaper method of immunization of young pigs and a curative agent in chronic cases.

The situation is at present most encouraging. The public has awakened to the fact that it can receive State aid, and that this department is handling the serum treatment most advantageously. As a result, cases are being reported more promptly, quarantines are being better observed, and the demand for serum treatment even now taxes the resources of the department. We hope in the coming year to do very much more work along this line, particularly among herds of individual farmers. Thus far a large percentage of our work has been in herds owned by State and other institutions, but indications are that the coming year will see much more vaccination among the farmers' herds.

The statistics in connection with the work of hog cholera given above are also given below in tabular form.

Hog Cholera Statistics.

Number of outbreaks reported,	100
Number of outbreaks reported not cholera, upon examination, . .	20
Number of reported swine known to have died without treatment, approximate,	900
Number of herds known to be infected,	65
Number of herds given single treatment previous to June 1, . . .	10
Number of animals in these herds released after completed treatment,	305
Number of animals in same herds which died after single treatment (29.2 per cent.),	89
Number of herds in which double treatment has been used since June 1,	18
Number of animals in these herds which received double treatment,	591
Number of animals which died following double treatment (2 per cent.),	12
Number of herds in which single treatment has been used since June 1,	31
Number of animals in these herds which received single treatment, .	428
Number of animals which died following single treatment (9.5 per cent.),	41

Number of animals saved by single and double treatment, in which treatment has been completed,	1,264
Number of infected herds still under treatment, December 1,	5
Number of animals in these herds, approximate,	4,000
Number of animals given double treatment,	3,000
Number of animals given single treatment,	1,000
Number of noninfected herds,	2
Number of animals in these herds,	104
Number of single treatments,	—
Number of deaths following double treatment,	—

From the department's study of treatment of hogs infected with or exposed to hog cholera, and acting under the advice of agents of the department who had made the study of this disease a specialty, together with the advice of national and other State live-stock sanitary authorities, I recommended the adoption of an order prohibiting the sale, distribution and use of virulent blood from hog-cholera-infected hogs, or "virus," and anti-hog-cholera serum, in this State, except by permission of the Commissioner of Animal Industry. Before taking this step I had carefully considered the possibility of unduly interfering with the practice of regularly registered veterinarians. Since coming to the department, I have strenuously avoided any interference on the part of that department with the individual right or practice of such regularly registered veterinarians; and in urging the passage of the following order, I felt that the department could, through the operations of its specialists, who were qualified by special training to administer the remedies therein referred to, contribute not only to the ultimate success of the department and benefit to the individual farmer, but could eventually, through the educational work done by our specialists in this line, cause owners of hogs, as well as veterinarians, to become more familiar than they are at present with the possibilities of their use, to the end that eventually this method of treatment might be more generally adopted under the approval of both owners and professional men alike.

It has been my custom to instruct our specialists to invite observation of their operations, on the part of local veterinarians and owners who would take proper sanitary precautions to prevent spread of infection, to the end that all inter-

ested might become more familiar with the general subject and the possibilities of success through the intelligent use of the materials referred to in the following order: —

ORDER No. 12.

THE COMMONWEALTH OF MASSACHUSETTS,
DEPARTMENT OF ANIMAL INDUSTRY,
STATE HOUSE, BOSTON, Oct. 28, 1914.

To All Persons whom it may concern: —

Whereas the disease known as hog cholera, which is a contagious disease and is so recognized under the laws of this Commonwealth, prevails extensively among swine in this Commonwealth, and whereas it has become necessary to adopt measures for the prevention of the spread of said contagious disease,

Now, therefore, acting under and by virtue of the authority vested in me by the provisions of chapter 90 of the Revised Laws and chapter 608 of the Acts of 1912, and all acts in amendment thereof and addition thereto and all other authority me hereto enabling, I do hereby make the following order and regulation: —

No person, firm or corporation shall distribute, sell or use in the Commonwealth of Massachusetts virulent blood from hog-cholera-infected hogs, or "virus," or anti-hog-cholera serum, unless written permission has been obtained from the Commissioner of Animal Industry for such distribution, sale or use, which written permission will be granted persons deemed proper by the Commissioner of Animal Industry.

This order shall take effect upon its approval.

This order shall be published by sending a copy to each inspector of animals in the Commonwealth, and by distribution to known breeders of swine, to commercial houses known to be dealing in the aforesaid commodity, and to veterinarians registered under the laws of the Commonwealth.

FRED FREELAND WALKER,
Commissioner of Animal Industry.

Approved in Council, Nov. 11, 1914.

E. F. HAMLIN,
Executive Secretary.

FOOT-AND-MOUTH DISEASE.

The regular routine work of the department was suddenly interrupted early in November (November 5, to be exact), when a telegram was received at department headquarters from Dr. Henry E. Paige of Amherst, announcing a probable case of foot-and-mouth disease in that town. The rapidity with which this disease spreads, its dangerous nature, a menace to beast

and man, and the possible loss of valuable income-producing property demanded instant attention and quick action. Believing that the department met the crisis promptly and effectively, I deem it wise to place before your honorable body a chronological story of the department's action, such action being based on and in harmony with the code established by the United States Bureau of Animal Industry.

My attention was first attracted by a newspaper paragraph to the effect that foot-and-mouth disease had been discovered in Niles, Mich., on October 15, and I was especially interested because of the added statement that the disease had been prevalent in Michigan and northern Indiana since early in August.

Prior to November 5, when I was notified of the probable presence of the disease in this State, I had ordered our agents to exercise extra care in ante-mortem examinations, especially in cattle coming from western areas. We had received no word from the United States Bureau of Animal Industry at the time of these early precautions, although that Bureau supervises all interstate shipments of cattle, and is considered to be especially active in guarding the several States along the line of shipment from live stock from infected areas. Hearing nothing in the way of warning from this official source, I naturally assumed that the disease was well in hand in the West, and that the probability of its reaching Massachusetts was more or less remote.

On October 21 Dr. William T. White, agent of this department, who had been attending, as a delegate, a meeting of the Eastern Live Stock Sanitary Association at Albany, N. Y., telegraphed me that Dr. Wills, chief veterinarian of New York, had referred to the existence of the disease in the Buffalo stockyards. I at once told Dr. James F. Ryder, in charge of the Boston station of the United States Bureau of Animal Industry, what I had heard, and asked him if he had cognizance of the disease being as far east as Buffalo. His reply was in the negative. I requested him to have the federal department notified, and that all cars bringing cattle to Massachusetts be disinfected before shipment. A few days later I asked again if he had heard of any cases in Buffalo, and again he answered he had not.

As a matter of precaution I established the most systematic and rigorous ante-mortem examinations of all cattle arriving from western points. The federal authorities co-operated with this department under Dr. Ryder's supervision, subjecting the stock to a double inspection. No evidence of disease was found in any shipment, and it was like lightning out of a clear sky when I received notice from Dr. Henry E. Paige, on November 5, of a probable case in Amherst, Mass. With Dr. Ryder I visited this herd November 6, and he confirmed the diagnosis made earlier by our Dr. Henry E. Paige and Prof. James B. Paige. We found the premises thoroughly policed and a substantial and strict quarantine was established.

On the afternoon of November 5 I heard of a case at Mendon, Mass., and Agent F. C. Field was sent out to investigate. His report, made at 6 P.M., confirmed the diagnosis, and the infected herd was quarantined, as well as three adjacent herds using the same brook for water supply. On my return from Amherst, November 6, active operations, including the closing of the Brighton stockyards, were begun, to prevent the spread of the disease. Agents of the department were equipped with rubber outfits, and sent to different parts of the State to make careful examination of cattle that were known to have gone from the Brighton stockyards during the previous fortnight. On the receipt of notice of the first evidence of the disease in the State, I had secured from the leading dealers at the Brighton stockyards a list of their sales for two weeks prior to the closing of the yards, and through the information so obtained we were speedily enabled to locate practically every animal that had been distributed from that point.

Realizing that the situation was decidedly grave, and that the pending embargo would involve the interests of many industries within the State, I called in consultation twenty-five leading farmers, representatives of slaughtering establishments, and veterinarians, for the purpose of acquainting them with my proposed plan of campaign, and benefiting from their advice. They met me at the State House November 7, and on the same day His Excellency the Governor called a special session of the Council to act on two orders recommended by me, which placed in absolute and unqualified quarantine every

farm in the State, and prohibited the movement of any live stock from one building to another, if such movement was to be over any highway or byway, and also prohibited the removal of any material from infected premises. So successful was the working of this quarantine that less than ten of the cases that have developed in Massachusetts trace their origin to any point other than the Brighton stockyards. The orders above referred to follow: —

ORDER No. 13.

THE COMMONWEALTH OF MASSACHUSETTS,
DEPARTMENT OF ANIMAL INDUSTRY,
STATE HOUSE, BOSTON, NOV. 7, 1914.

To All Persons whom it may concern: —

Whereas the disease known as foot-and-mouth disease, which is a contagious disease and is so recognized under the laws of this Commonwealth, exists among animals in this Commonwealth, and whereas it has become necessary to adopt measures for the prevention of the spread of said contagious disease,

Now, therefore, acting under and by virtue of the authority vested in me by the provisions of chapter 90 of the Revised Laws and chapter 608 of the Acts of 1912 and all acts and amendments thereof and additions thereto and all other authority me hereto enabling, I do hereby make the following order and regulation: —

No hay, straw, forage, grain, utensils or other material shall be removed from premises upon which foot-and-mouth disease exists and for such period thereafter as in the opinion of the Commissioner of Animal Industry the public safety so demands, except by permission of the Commissioner of Animal Industry.

This order shall take effect upon its approval.

This order shall be published by sending a copy to each inspector of animals in the Commonwealth, to registered veterinarians within the Commonwealth, and by general distribution.

FRED FREELAND WALKER,
Commissioner of Animal Industry.

Approved in Council, Nov. 7, 1914.

E. F. HAMLIN,
Executive Secretary.

ORDER No. 14.

THE COMMONWEALTH OF MASSACHUSETTS,
DEPARTMENT OF ANIMAL INDUSTRY,
STATE HOUSE, BOSTON, NOV. 7, 1914.

To All Persons whom it may concern: —

Whereas the disease known as foot-and-mouth disease, which is a contagious disease and is so recognized under the laws of this Commonwealth,

exists among animals in this Commonwealth, and whereas it has become necessary to adopt measures for the prevention of the spread of said contagious disease,

Now, therefore, acting under and by virtue of the authority vested in me by the provisions of chapter 90 of the Revised Laws and chapter 608 of the Acts of 1912 and all acts and amendments thereof and additions thereto and all other authority me hereto enabling, I do hereby make the following order and regulation:—

No neat cattle, sheep, other ruminants or swine are to be shipped or transported by railroad, boat or other conveyance, or to be driven on any public highway or byway within the Commonwealth, except by permission of the Commissioner of Animal Industry.

All dogs or cats on quarantined premises must be securely restrained during the period of quarantine.

This order shall take effect upon its approval.

This order shall be published by sending a copy to each inspector of animals in the Commonwealth, to registered veterinarians within the Commonwealth, and by general distribution.

FRED FREELAND WALKER,
Commissioner of Animal Industry.

Approved in Council, Nov. 7, 1914.

E. F. HAMLIN,
Executive Secretary.

On November 8 I went to Washington and consulted with Dr. A. D. Melvin of the federal bureau in order to perfect a plan of co-operation with the national government. During the conference the following day I was informed that the disease had spread to fourteen States. I was told by Dr. Melvin that the United States Department of Agriculture proposed to submit to the governments of infected States a plan of compensation under which one-half of the expense incident to control of the disease should be paid by the United States government, and one-half by the State. Dr. Melvin also furnished me the form used by his department to indicate the value of cattle appraised, with the suggestion that it be adopted in Massachusetts, which was later done. It was further agreed that the United States government and the State should each be represented by an appraiser, each to pay its representative. The advice of Dr. Melvin, the one man who has doubtless had greater experience along this line than any other in the country, was cheerfully given, and was most helpful.

On November 11, in order to more thoroughly restrict the spread of this disease, the following order was recommended and approved: —

ORDER No. 15.

THE COMMONWEALTH OF MASSACHUSETTS,
DEPARTMENT OF ANIMAL INDUSTRY,
STATE HOUSE, BOSTON, Nov. 11, 1914.

To All Persons whom it may concern: —

Whereas the disease known as foot-and-mouth disease, which is a contagious disease and is so recognized under the laws of this Commonwealth, exists among animals in this Commonwealth, and whereas it has become necessary to adopt measures for the prevention of the spread of said contagious disease,

Now, therefore, acting under and by virtue of the authority vested in me by the provisions of chapter 90 of the Revised Laws and chapter 608 of the Acts of 1912 and all acts and amendments thereof and addition thereto and all other authority me hereto enabling, I do hereby make the following order and regulation: —

1. No poultry, pigeons or other farm birds are to be shipped or transported by railroad, boat or other conveyance, or moved in any manner upon the public highways or byways within this Commonwealth, except by permission of the Commissioner of Animal Industry.

2. The above referred to live stock is not to be conveyed by any transportation company from States under federal quarantine.

This order shall take effect upon its approval.

This order shall be published by sending a copy to each inspector of animals in the Commonwealth, and by general distribution.

FRED FREELAND WALKER,
Commissioner of Animal Industry.

Approved in Council, Nov. 11, 1914.

E. F. HAMLIN,
Executive Secretary.

The work of appraisal began November 13 with the herd of L. H. Taylor of North Amherst, and has gone forward most satisfactorily as occasion required. The United States government was represented by Otis H. Forbush of Acton, and the State by Myron T. Carrigan of Concord, acknowledged experts as to the value of neat stock. The necessary slaughtering has been done under the direction of the department, and not a complaint has been filed at the office by owners of stock thus disposed of or agents of humane societies. The total appraisal of live stock killed up to and including November 30 is

\$68,566.25, representing 891 cattle, 276 swine, 1,694 fowl, 2 sheep and 1 goat.

The relations between the Federal and State forces have been most harmonious, and, in so far as it was possible, the two organizations have worked as one. As evidence of the cordial relations existing between the nation and the State in this work, the following portion of a letter has a place here.

Dr. J. R. Mohler, acting chief of the Bureau of Animal Industry at Washington, in a letter addressed to the Commissioner of Animal Industry dated November 6, writes as follows: —

The Bureau is glad that it has you to look after the work in Massachusetts, as your training and judgment are considered a valuable asset for success through efficient co-operation.

At the date of this report the disease is well in hand, and there is no doubt of its early eradication. The action of the State department was prompt and effective. Two days before notice from the United States department was received, and one day before the quarantine was established in the Chicago stockyards, the State of Massachusetts was under the strongest kind of quarantine restrictions. The work of eradication is being pushed with vigor. Each owner of appraised cattle has given a written acceptance of the appraised value of the stock killed in the form prescribed by the United States department, and owners will doubtless submit their several claims to the consideration of your honorable body during the session; and I recommend that your honorable body, in accordance with a plan submitted by the United States Bureau of Animal Industry and approved by the honorable Executive Council of this Commonwealth, make an appropriation sufficient to reimburse owners of cattle and property destroyed on account of foot-and-mouth disease, to the extent of 50 per cent. of the appraised value of the same.

Statistics in connection with the control and eradication of this disease, up to and including Nov. 30, 1914, are given below. They show the towns, in alphabetical order, in which the disease has been found, the number of herds in those

towns, the number of animals and fowl appraised, the amount of appraisal, the date on which positive cases of the disease were reported by agents of the department and the date of killing.

Statistics on Foot-and-mouth Disease for Year ending Nov. 30, 1914.

Town.	Date reported positive.	Date of Killing.	Cattle.	Swine.	Fowl.	Sheep.	Goats.	Appraisal.
Amherst, . . .	Nov. 5	Nov. 14	19	6	89	-	-	\$1,895 00
Amherst, . . .	Nov. 5	Nov. 13	8	-	35	-	-	621 50
Ashland, . . .	Nov. 13	Nov. 27	26	-	-	-	-	1,790 00
Attleboro, . . .	Nov. 6	Nov. 18	21	2	107	-	-	1,550 00
Auburn, . . .	Nov. 12	Nov. 25	22	2	-	-	-	1,600 00
Bellingham, . . .	Nov. 10	Nov. 18	17	-	70	-	-	1,120 00
Bellingham, . . .	Nov. 10	Nov. 17	8	3	100	-	-	715 00
Belmont, . . .	Nov. 8	Nov. 19	8	-	4	-	-	402 00
Boston, . . .	Nov. 12	Nov. 20	43	-	-	-	-	3,300 00
Brockton, . . .	Nov. 12	Nov. 27	6	-	53	-	-	516 25
Chicopee, . . .	Nov. 10	Nov. 16	2	-	60	-	-	226 00
Danvers, . . .	Nov. 13	Nov. 28	8	-	33	-	-	495 00
Dracut, . . .	Nov. 13	Nov. 26	87	130	34	-	-	8,364 00
Grafton, . . .	Nov. 16	Nov. 23	12	8	36	-	-	820 00
Grafton, . . .	Nov. 10	Nov. 22	18	-	70	-	-	1,300 00
Granby, . . .	Nov. 8	Nov. 16	39	-	175	-	-	3,157 50
Granby, . . .	Nov. 17	Dec. 3	26	-	50	-	-	1,890 00
Hingham, . . .	Nov. 14	Nov. 30	142	6	11	-	-	10,361 00
Hingham, . . .	Nov. 18	Nov. 30	9	16	-	-	-	691 00
Lynn, . . .	Nov. 14	Nov. 28	16	2	-	-	-	921 00
Maynard, . . .	Nov. 14	Nov. 27	11	-	50	-	-	650 00
Medford, . . .	Nov. 20	Dec. 2	28	5	30	-	-	1,535 00
Mendon, . . .	Nov. 5	Nov. 17	9	2	-	-	-	585 00
Mendon, . . .	Nov. 18	Nov. 28	13	-	-	-	-	1,000 00
North Attleborough,	Nov. 21	Dec. 3	6	2	-	-	-	325 00
Shrewsbury, . . .	Nov. 22	Nov. 25	10	3	-	-	-	705 00
Stoneham, . . .	Nov. 19	Dec. 1	10	-	28	-	-	915 00
Sudbury, . . .	Nov. 30	Dec. 5	20	5	38	-	-	1,225 00
Swansea, . . .	Nov. 17	{ Nov. 22 Nov. 23 }	56	-	-	-	-	4,750 00
Swansea, . . .	Nov. 11	Nov. 25	24	44	250	-	-	2,200 00
Swansea, . . .	Nov. 17	Nov. 23	21	-	125	-	-	1,900 00
Watertown, . . .	Nov. 21	Dec. 3	6	-	30	-	-	525 00

Statistics on Foot-and-mouth Disease for Year ending Nov. 30, 1914—Con.

TOWN.	Date reported positive.	Date of Killing.	Cattle.	Swine.	Fowl.	Sheep.	Goats.	Appraisal.
West Boylston,	Nov. 14	Nov. 24	6	—	—	—	—	\$300 00
West Boylston,	Nov. 15	Dec. 2	23	1	2	—	—	1,670 00
Westport,	Nov. 11	Nov. 23	16	31	150	2	1	2,000 00
Worcester,	Nov. 27	Dec. 4	13	—	—	—	—	1,130 00
Worcester,	Nov. 11	{Nov. 21 Nov. 22}	65	8	—	—	—	3,900 00
Worcester,	Nov. 23	Dec. 2	17	—	64	—	—	1,516 00
Totals, ¹	—	—	891	276	1,694	2	1	\$68,566 25

¹ From November 5 to November 30, inclusive, 600 herds were inspected by agents of the department.

MISCELLANEOUS DISEASES.

The Department of Animal Industry is called upon during the year to deal with other diseases of a contagious nature, in addition to rabies, glanders, bovine tuberculosis, hog cholera and foot-and-mouth disease. Among them are actinomycosis, mange, symptomatic anthrax or blackleg, anthrax, Texas fever, and tuberculosis in other animals than cattle.

Eleven cases of actinomycosis have been reported; 9 of these animals were slaughtered, and 2 were found not to have the disease.

There has been a further decrease in the number of animals reported as suffering from mange. Twenty places where mange was supposed to exist were reported, 3 of which were found to be free from it. At the remaining 17 places 303 head of cattle and 1 horse were found to be affected.

The application of a mixture of engine oil, phenol, kerosene and sulphur has apparently proved most efficacious in treating this trouble, and has been recommended, with excellent results, to owners of diseased animals.

The protective inoculation of young cattle where symptomatic anthrax or blackleg has occurred has been continued where owners requested, and has been done under the direction of Dr. James B. Paige of the Amherst Agricultural College, with the assistance of his brother, Dr. Henry E. Paige, an agent of this department. Reports have been received from 85 owners, and 633 head of cattle have been inoculated.

